

REMARKS

STATUS OF THE CLAIMS

Claims 2-6 and 8-17 are pending in the application.

Claims 13 and 14 are rejected under 35 USC 102(b) as being anticipated by Mizusawa (US Patent No. 5,400,083).

Claim 17 is rejected under 35 USC 102(b) as being anticipated by Matsumoto (US Patent No. 4,731,651).

Dependent claims 15-16 depending from rejected claims 13 and 14, respectively, are objected to as being allowable if amended into independent form.

Claims 2-6 and 8-12 are allowed.

Thus, claims 2-6 and 8-17 remain pending for reconsideration, which is respectfully requested.

No new matter has been added.

REJECTIONS

Mizusawa and Matsumoto are newly cited, and, thus, newly relied upon.

INDEPENDENT CLAIM 13

Regarding independent claim 13, Mizusawa discusses reducing noise having a correlation between two successive frames (column 2, lines 6-54 and column 3, lines 45-68). It is readily apparent that Mizusawa does not adjust the MDS signal output by the motion detector 15, which differs from the claimed present invention's, "a motion calculator ***adjusting according to a formulaic value the detected motion information values*** of the input nth image field based upon motion information values of an input n+1th image field." Further, Mizusawa's FIG. 2A mixing circuit 16 fails to adjust the MDS signal input from the motion detector 15. Mizusawa's FIG. 2A illustrates that the motion detector 15 outputs an MDS signal to the mixing circuit 16 and that the mixing circuit 16 does not adjust the MDS signal. Further, Mizusawa's column 3, lines 45-57, which is relied upon by the Office Action to reject independent claim 13, discusses "The mixing circuit 16 mixes the two signals SD and SF according to the following formula: $SF.K+SL$

(1-K), $0 \leq K \leq 1$. The variable K depends on a motion detection signal MDS produced by the motion detector 15.” However, Mizusawa is silent on adjusting the MDS signal anywhere, for example, prior to input to the mixing circuit 16.

Furthermore, Mizusawa, in column 4, lines 11-17, discusses “the motion detector 15 can selectively produce the signal MDS having three kinds of state, such as low, middle and high levels, in accordance with the degree of correlation between two successive frames, the variable K can be set to equal to one of three numerical values, such as “1”, “1/2” and “0”, respectively.” However, Mizusawa’s motion detection signal (MDS) states differ from the claimed present invention’s, “**adjusting according to a formulaic value the detected motion information values.**” In contrast to Mizusawa, the claimed present invention as recited in independent claim 13 provides, “a motion calculator **adjusting according to a formulaic value the detected motion information values** of the input nth image field **based upon motion information values of an input n+1th image field.**” Support for independent claim 14 can be found, for example, in paragraph 36 of the present Application.

Furthermore, in contrast to Mizusawa, including Mizusawa’s column 5, lines 57-68 as relied upon in the Office Action to reject dependent claim 14, the present claimed present invention as recited in dependent claim 14 provides,

14. (Original) The processor of claim 13, wherein the motion calculator ***calculates a mixed value (α) according to the adjusted detected motion information values*** of the input nth image field and outputs the mixed value to a deinterlacing processor outputting an image frame based upon the mixed value.

Mizusawa’s column 5, lines 57-68, discuss a mixing means for mixing the delayed signal and the processed signal at a first rate ... and at a second rate. It is readily apparent that in Mizusawa’s FIG. 2A, the MDS signal input to the mixing circuit 16 is not adjusted. Mizusawa fails to disclose or suggest the claimed present invention’s, “***calculates a mixed value (α) according to the adjusted detected motion information values ... and outputs the mixed value to a deinterlacing processor,***” because Mizusawa does not adjust the MDS signal input to the mixing circuit 16, and, also, Mizusawa does not output the mixed value to a deinterlacing processor. Support for dependent claim 14 can be found, for example, in paragraph 41 of the present Application.

Therefore, Mizusawa cannot anticipate independent claim 13 and dependent claim 14 and these claims are allowable, because Mizusawa does not disclose or suggest every element as recited in these claims (According to MPEP 2131, to anticipate a claim, the reference must teach every element of the claim either expressly or inherently).

INDEPENDENT CLAIM 17

Regarding independent claim 17, support can be found, for example, in FIG. 2 (blocks 151, 155, 153 and 157) and paragraph 30 of the present Application. Matsumoto discusses an image movement correction in a field conversion system, such as one that converts an NTSC television signal for display on a PAL television (Abstract, column 1, lines 53-58 and column 2, lines 45-53). In particular, the Office Action relies on Masumoto's column 1, line 60 to column 2 line 5, which discusses:

In accordance with an aspect of the present invention movement correcting apparatus for shifting a television image is provided in which a movement command is formed based upon a movement vector derived from the input image, and an output is then formed that is image shifted by this movement command. In producing this movement command the present invention uses an image of the first field of the input image and an image of the second field of the input signal that are derived from the same field and made to simultaneously exist. Using this special movement command permits the image shifting operation to shift the image 0.5 line in the vertical direction, thereby improving the accuracy of the movement correction in the vertical direction.

In particular, Masumoto discusses "detecting a movement vector" in column 1, lines 60-63, and in column 3, lines 58-64 discusses a "movement vector detection" 5. Masumoto also discusses a "movement correction circuit" 14 as part of shifting the television image, based upon the detected movement vector (FIG. 1). However, in contrast to Masumoto, the present claimed invention as recited in independent claim 17 provides:

17. (PREVIOUSLY PRESENTED) A machine readable storage storing at least one program controlling a moving image processor according to a process comprising:

removing spurious still regions and spurious motion regions during an image field motion detection, based upon a ***limited added to or a limited subtracted from, pixel motion information values*** of a current image field using only immediately preceding and succeeding image fields to the current image field.

In other words, Masumoto's "movement correction circuit" 14 (column 4, line 60 to column 5, line 59 and column 4, lines 30-59) discusses field shifting. Further, Masumoto discusses, "Nevertheless, it falls to the misprocess detecting circuit 17 to determine whether the misprocess by the movement correcting circuit 14 has occurred or not" (column 6, line 20 to column 7, line 22). However, Masumoto's "movement correction circuit" 14 fails to disclose or suggest the claimed present invention's, "**removing spurious still regions and spurious motion regions during an image field motion detection, based upon limited added to or a limited subtracted from, pixel motion information values.**" In other words, Masumoto does not utilize "**limited added to or a limited subtracted from, pixel motion information values.**" Therefore, Masumoto cannot anticipate independent claim 17, and, further, independent claim 14 is at least patentably distinguishing over the prior art of record for the same rationale as independent claims 4 and 10, which using claim 4 as an example, provide, "a motion calculator **correcting** the motion information values of the input nth field stored in the motion calculation buffer unit, based on the motion information values of an input n+1th field detected by the motion detection unit, **by adding a given first value to a motion information value stored in the motion calculation buffer unit if a corresponding pixel/block has motion, and subtracting a given second value from a motion information value stored in the motion calculation buffer unit if a corresponding pixel/block has no motion.**"

In view of the remarks, withdrawal of the rejection of pending claims and allowance of pending claims is respectfully requested.


CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

Respectfully submitted,
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